

FINAL ENVIRONMENTAL ASSESSMENT:

DOI-BLM-AZ-C020-2015-004-EA

DEVELOPMENT OF THE WEST PORT GOLD PLACER
OPERATION, LA PAZ COUNTY, ARIZONA

Submitted To

BUREAU OF LAND MANAGEMENT

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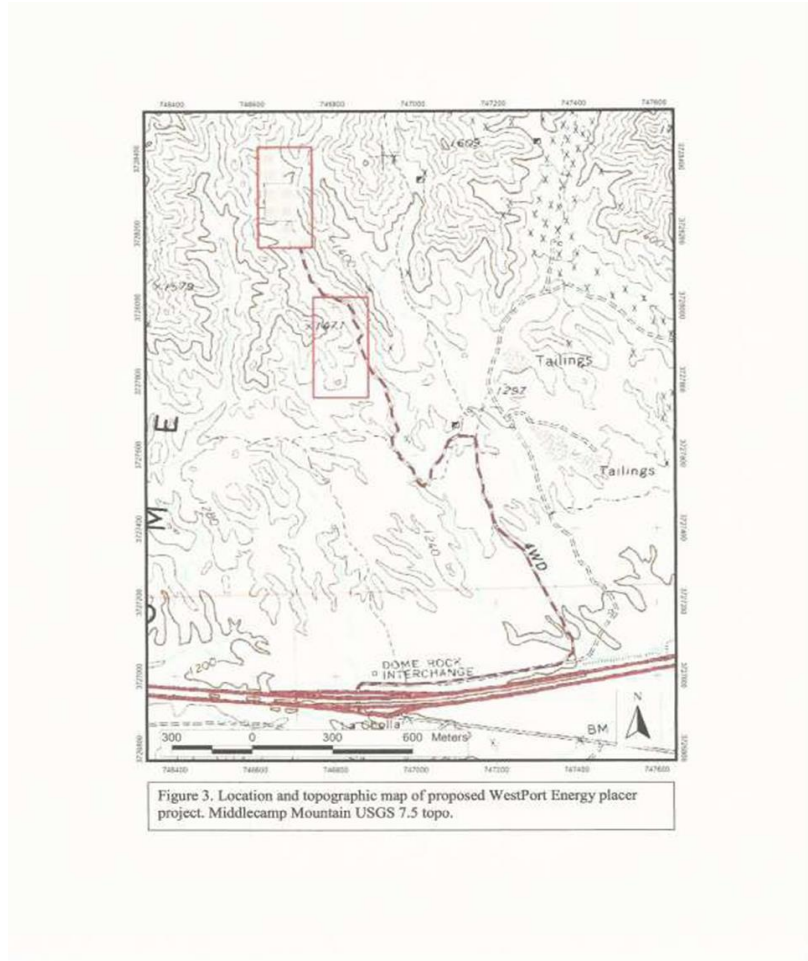
19 May 2016

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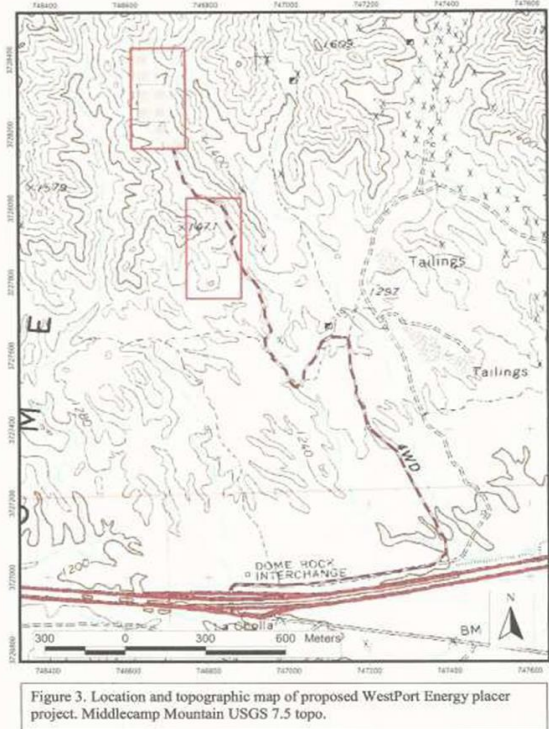
1.0 INTRODUCTION

In November 2014, West Port Energy, LLC (WPE) submitted a preliminary Mining Plan of Operations (MPO) to the Bureau of Land Management (BLM) Yuma Field Office (YFO) to excavate and process ore found in the unpatented federal placer mining claims WPE#1 and WPE#2. In the MPO, WPE proposes to excavate approximately 1,000,000 tons of material over a 6-10 year period from within the boundaries of one 20 acre unpatented claim (WPE #1) and temporarily store the processed tailings with the overburden on WPE #2, another 20 acre unpatented claim located 660 feet south of the processing plant. The total proposed disturbance is approximately 16.2 acres over the duration of the project. This Environmental Assessment (EA) will analyze the impacts associated with the proposed action as well as those impacts associated with two other action Alternatives and a no-action Alternative.

1.1 Project Location

The project area is located just south of Middle Camp Mountain in the central portion, eastern slope of the Dome Rock Mountains. The proposed mine site is located approximately 6.2 miles west of Quartzsite, Arizona in Township 4 North, Range 20 West, Section 28 of the Gila and Salt River Meridian. The Dome Rock Mountains run north and south to the west of U.S. Highway 95. Interstate 10 divides the Dome Rock Range into a north and south section. The project site is approximately 1 mile north of Interstate 10, from exit 11 Dome Rock Road (Refer to Map 1.1.1).

4.4.4 Project Location Map



1.2 Purpose and Need for the Proposed Action

The BLM's purpose and need is to respond to an MPO application submitted by WPE to conduct gold placer mining activities on the WPE #1 and WPE#2 mining claims (two 20-acre unpatented federal placer mining claims).

1.3 Regulations That Apply

This EA has been prepared to meet the requirements of the National Environmental Policy Act (NEPA) and other laws that apply to this particular project, including the Federal Land Policy and Management Act of 1976 (USDI, BLM 2001) (43 U.S.C.1701), National Historic Preservation Act (NHPA), the Federal Endangered Species Act (ESA), the Resource Conservation and Recovery Act (RCRA) and the Clean Water Act (CWA). Since the MPO is subject to the approval by the BLM, this EA follows the internal guidelines set forth within the BLM NEPA Handbook (H-1790-1) (40 CFR 1508).

2.0 PROPOSED ACTION AND ALTERNATIVES

2.1 Alternative A (Proposed Action)

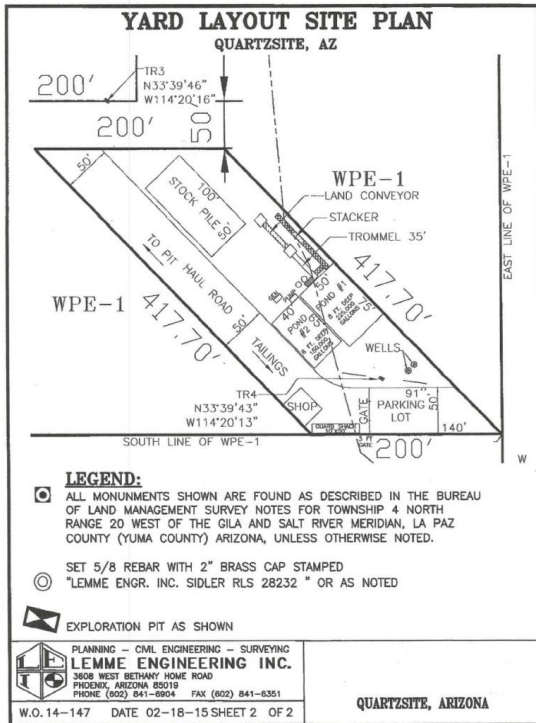
WPE proposes to excavate and process approximately 1,000,000 tons of material over a 6-10 year period from within the boundaries of one 20-acre unpatented claim (WPE #1) and temporarily store the processed tailings with the overburden on WPE #2; which is another 20-acre unpatented claim located 660 feet south of the processing plant. These tailings and overburden would be used in the concurrent reclamation of the disturbed area on the WPE #1 claim. The claims would be accessed along an existing access road. Any disturbance associated with the access road would be contained within a 30-meter buffer zone. This buffer zone would not be fully impacted, but represents a potential impact area associated with road improvements.

All mining activities would take place above ground using placer mining techniques with the processing of the ore to be conducted on-site. Open cut mining would involve stripping away vegetation, retaining large plant species for eventual reclamation, gathering seeds for reclamation, and separately stockpiling the top 18 inches of top soil to be used in the reclamation process. This would allow access to the gold bearing gravels buried below. The gold bearing gravels would be excavated by bulldozers and excavators and trucked to the wash plant for the recovery process. The excavation site would be located up canyon of the wash plant with the direction of the mining activity towards the wash plant making the footprint of the operation smaller annually through the concurrent reclamation process.

The processing area would be approximately 200 feet wide by 420 feet long. The wash plant would be located within the processing area and would consist of a 15KW – 500 KW generator, scrubbing trommel, scalping screens for sizing, and sluices which incorporate a dual centrifuge system and two 6-inch diesel-powered water pumps. Two holding ponds would contain and recirculate the water to accommodate the processing plant. The first pond would be the discharge pond. It would measure 50 ft. x 75 ft. and 8 ft. deep (225,000 gallons). It would have at least one concrete wall to facilitate a de-watering screw. The second pond would be the clean water pond, and it would measure 40 ft. x 65 ft. and 8 ft. deep (150,000 gallons). The ancillary facilities associated with the processing equipment would include up to two wells located in the south-east corner of the processing area. An initial well would be drilled and evaluated to determine if the well capacity would accommodate the operation. If it would not provide sufficient water for the operation, a second well would be drilled. The two wells are expected to provide 25-35 gallons per minute (gpm) each. A 10 ft. x 50 ft. office/guard shack trailer with no bathrooms, a 30 ft. x 30 ft. shop (steel building) with a concrete floor (6 inches thick), a 91 ft. x 200 ft. gravel parking area, and a self-contained 28-ft. RV travel trailer to be used for changing and as a restroom would also be constructed or placed as ancillary facilities (Refer to Map 2.1.1).

Due to the extensive damage caused by past mining activities (some of which has been reclaimed by WPE during the exploration phase), the previously-mined tailings would be re-processed for gold and all areas associated with these past mining activities would be reclaimed. Native mature vegetation including saguaros, palo verde trees, and ironwood trees would be avoided or containerized for use at the time of reclamation.

2.1.1 WPE Yard Layout Map



2.2 Alternative B (Trucking Water Alternative)

This Alternative involves the same footprint as Alternative A without drilling the wells. Water would be trucked in from Quartzsite. Each truck can carry 4000 gallons so approximately 95 truckloads to fill the two ponds (375,000 gallons) and then 10 – 15 loads hauled per day as long as the mine is operating.

2.3 Alternative C (Piping Water Alternative)

This Alternative involves the same footprint as Alternatives A and B without drilling wells or hauling water. Water would be pumped from existing wells located within two miles of the retaining ponds location by pipe. The 6 inch PVC pipe would be a temporary (up to 10 years) installment above ground across lands approved by BLM. If this alternative becomes preferred, additional scoping may be required. The wells in the area that meet the possible criteria are:

WATER WELLS WITHIN TWO MILES OF WPE MINE AREA

<u>Registration#</u>	<u>Type</u>	<u>Depth in ft.</u>	<u>Casing</u>	<u>Water level ft.</u>	<u>GPM</u>	<u>Miles to mine</u>
55-808638	Exempt	340	8 in. for 20 ft.	270	Not listed	0.5
55-526627	Non-exempt	260	6 in. PVC	50	80	1.55
55-518344	Exploration	260	6 in. case	Not listed	Not listed	1.45

Any or all of these wells may need major work before being useable. WPE would request access to any well allocated to this operation for maintenance and repairs.

2.4 Alternative D (No Action Alternative)

Under the No Action Alternative, the proposed project would not be completed and no further mining would be done on the WPE #1 and WPE #2 claims. No further reclamation work would be done and any current impacts from previous mining activity would remain.

3.0 AFFECTED ENVIRONMENT

3.1 Geology

The WPE claims are located within the Basin and Range Geomorphologic Province (Wiita 2015, Yeats 1985). The region is characterized by linear mountain ranges separated by downthrown, alluvium-filled basins. In southwestern Arizona, a “belt” of Precambrian metamorphic rocks (“core complex”) form a transition zone between the younger, predominantly volcanic desert mountains of the south and folded and faulted highlands of central Arizona.

The Dome Rock Mountains rise up just west of Quartzsite and extend north to south for tens of miles. The Dome Rock Mountains in the Middle Camp Mountain area are meta-sedimentary and igneous schists of Pre-Cambrian to Mesozoic age. Mesozoic-age intrusive rocks, chiefly granites, intrude the Pre-Tertiary rocks and are believed to be the source for much of the gold present in the Dome Rock Mountains.

The eastern margin of the Dome Rock Mountains is blanketed by alluvial fans. Close to the range front of Middle Camp Mountain, the washes (drainages) spread out across the alluvial fan apron, depositing a relatively even thickness of material. The WPE claims probably received sediment from Middle Camp Mountain’s washes which still carry gold bearing gravels to this day.

3.1.1 Soils and Mineral Resources

The middle Dome Rock Mountains, where this project would occur, is composed of Pre-Cambrian schists, 160-165 million year old igneous rocks interspersed with areas of shallow alluvia made up of these granitic and other igneous sediments. A few Mesozoic and Tertiary lava flows are found throughout the region as well, but are not present within the project area. All of the sediment currently deposited on the WPE # 1 is from Middle Camp Mountain and

varies in thicknesses of alluvium as the alluvial fan complex aggraded and buried the bedrock along the range front.

Exploration trenches have shown bedrock is located between 12-30 feet throughout the property. There are false bedrock (caliche) layers through-out the property. Each of these false bedrock layers shows heavy gold concentrations, as these caliche layers reside at the bedrock alluvium contact (Wiita 2015).

Previous mining and exploration activities have disturbed the majority of the proposed area included in this plan (legacy impacts). These disturbed areas were not reclaimed by the previous operators, but on approval of this Mine Plan West Port Energy will include these areas in its reclamation plan. A total of 3.25 acres of the estimated 11.53 acres of mine pit areas has been substantially disturbed by legacy mine impacts. These tailings will be processed during the course of mining and used in the restoration of mine reclamation.

3.2 Land Use

A search of current La Paz County zoning regulations, County GIS maps, and Town of Quartzsite 2014 General Plan reveals that the project site is not currently zoned by La Paz County and is not within the Quartzsite Town planning boundary. Based on BLM master title plats and La Paz County Assessor records, the primary landowner in the area is the United States Government with the land administered by the BLM. There are three patented mining claims zoned RA 40 (rural agricultural minimum 40 acre) located approximately 4 miles east of the project site. Private lands five to six miles east are zoned Heavy Industrial and Regional Commercial.

Historically, the land has been utilized for mining and recreation, which are the primary uses today. Mineral exploration and mining has occurred in the Middle Camp Mining District since the 1860's. Remnant mine workings include modern era lumber, nails, tailing piles, and disturbed areas on the claims.

3.2.1 Recreational Land Use

Recreational activities around the project site are varied and diverse from late October through March. These outdoor activities include hiking, camping, hunting and rock-hounding and occur as dispersed recreation. The most prominent use is off-highway vehicle (OHV) use. Top user objectives are identified as sightseeing and driving back roads and these activities all help to support the local economy through seasonal visitation and general tourism.

The proposed project is within the La Posa Travel Management Area. Several existing primitive roads crisscross the general area of the proposed project and bisect the proposed access route. Many of them are currently open to public use. The surrounding area is also within the La Posa Destination Special Recreation Management Area and has a Prescribed Recreation Setting of Rural Natural. In general terms, this setting means that the main management objective in the area is to provide opportunities for the public to see, hear, or smell the natural resources and to encourage and support the local tourism industry.

3.2.2 Public Rights-of-Way and Other Land Uses

A search of BLM's LR2000 database shows that one BLM right-of-way (ROW) bisects the access road of the proposed project. This ROW is for a telecommunication line (AZA-008829) and is present in the S2S2 of section 28. The mining claims proposed for development are in

the NW4 of section 28. In addition to the MPO submitted by WPE, two authorized mining notices are located within Section 28.

Other linear rights-of-way including Interstate 10 and utility lines along the interstate alignment are located approximately 0.75 miles south of the project site.

3.3 Biological Resources

3.3.1 Description of Biological Community

The proposed project area occurs within the Lower Colorado River subdivision of the Sonoran desert scrub region of Arizona (Brown 1994). The Sonoran desert is unusual as a desert community in that moisture regimes, typified by uneven bi-seasonal rainfall and separated by typical spring and fall dry periods, are inland and not directly impacted by coastal weather as many desert of other parts of the world are. The floral communities are a result of influences from subtropical southern and chaparral northern habitats.

3.3.2 Vegetation

The habitat of the project area consists mainly of foothill palo verde (*Cercidium microphyllum*), ironwood (*Olneya tesota*), saguaro (*Carnegie gigantea*), smoketree (*Psoralea argophylla*), and ocotillo (*Fouquieria splendens*). Shrubs found in the area of the claim include creosote (*Larrea tridentata*), brittlebush (*Encelia farinosa*), Anderson thornbush (*Lycium andersonii*), bursage (*Ambrosia dumosa*), and saltbush (*Atriplex* sp). In addition to saguaro, several other cacti species were identified on the project area including fishhook cactus (*Mammillaria* sp), beavertail cactus (*Opuntia basilaris*), barrel cactus (*Ferrocactus wislizenii*), staghorn cholla (*Cylindropuntia acanthocarpa*), and teddy bear cholla (*Opuntia bigelovii*). Forbs and grasses include woolly plantain (*Plantago insularis*), (*Hilaria rigida*), grama grass (*Bouteloua* spp), lovegrass (*Eragrostis* spp), and three-awn (*Aristida* spp). Elevations on the project range from 1,200-1,400 feet (msl)(BIOME 2015).

3.3.4 Wildlife

Avian species common to the project area included common raven (*Corvus corax*), mourning dove (*Zenaidura macroura*), house finch (*Haemorhous mexicanus*), cactus wren (*Campylorhynchus brunneicapillus*), rock wren (*Salpinctes obsoletus*), and red-tailed hawk (*Buteo jamaicensis*). In addition to the avian species observed, other wildlife typical of lower Colorado Sonoran desertscrub include desert cottontail (*Sylvilagus audubonii*), black-tailed jackrabbit (*Lepus californicus*), common side-blotched lizard (*Uta stansburiana*), tiger whiptail (*Aspidoscelis tigris*), and zebra-tailed lizard (*Callisaurus draconoides*). These species are widespread throughout southwestern Arizona and found on or near the project area.

3.3.5 Threatened, Endangered, and Sensitive (TES) Species

Data consultations were made to the Arizona Game and Fish Department's (AGFD), USFWS, and BLMs Sensitive Species List (BLM 2010) to determine the Threatened, Endangered, or Sensitive species that may potentially occur on or near the project area. A total of 13 Federally listed species were identified as potentially occurring in La Paz County (USFWS 2013)(see Table 3.3.5.1).

Another 10 species were listed by the BLM as potentially occurring within the Colorado River District (BLM 2010). For species monitored by the BLM and AGFD, the Biological Assessment (BA)(BIOME 2015, Attachment A) considered only those species with potential to occur within the vicinity of the WPE#1 and WPE#2 claims if potentially suitable habitat was present.

Verification by the AGFD project review tool and the BLM consideration of each species substantiated this list. Those species that are widely distributed, mobile, and have the potential to occur on or near the project were also considered, but are not treated fully in the affects determination as they will not be impacted by project activities.

A total of 23 species were identified as potentially occurring near the proposed project. Fifteen of these were discounted due to lack of essential habitat (aquatic/wetlands/grasslands) and were not considered further in the BA. Of the remaining eight species listed by BLM, four have the potential to occur near the project area during the breeding season (American peregrine falcon, golden eagle, Le Conte's thrasher, and western burrowing owl), one may occur during winter migration as a vagrant (bald eagle), and two species were identified by the AGFD as having known occurrences within five miles of the project area (California leaf-nosed bat and cave myotis). Only one is known from the vicinity of the project area, the Sonoran desert tortoise (*Gopherus morafkai*).

3.4 Climate Change

The proposed project area is somewhat affected by climate change through the effects of moderate drought. The United States Geological Survey (USGS) estimates that over the next 50 years, La Paz County is expected to show an increase in annual mean temperature of 5 degrees and a 5% reduction in precipitation. Attached is the most current USDA drought monitor map. The area included in this operation is not in a PM-10 non-attainment area according to the Environmental Protection Agency.

3.5 Environmental Justice / Socio-Economics

3.5.1 Environmental Justice

Executive Order 12898, Federal Actions to Address Environmental Justice in Minority Populations and Low-income Populations (59 CFR 7629, 16 February 1994), requires that federal agencies identify and address any disproportionately high and adverse human health or environmental effects of their programs, policies, and activities on minority and low-income populations. The BLM also includes specific consideration of Federally-recognized American Indian tribal nations in its environmental justice analyses.

According to BLM's Economic Profile System, 13.6% of the population of La Paz County self-identifies as American Indian alone. This percentage is three times as high as the State of Arizona and well above the national average. Given that the Colorado River Indian Tribes (CRIT) are located primarily in La Paz County, they were considered by the BLM to be an Environmental Justice population of concern. This consideration was strengthened by the fact that although individuals living in La Paz County who are below the poverty level (18.4%) is almost equal to the percentage in Arizona as a whole (18.2%), the percentage of those living in poverty who self-identify as American Indians (22.4%) is more than twice the percentage of those in all of Arizona (9.3%).

After careful consideration of the proposed action and the Alternatives, the BLM has determined that none of the Alternatives analyzed herein is expected to have disproportionate or adverse environmental or health effects on the CRIT. Given this, Environmental Justice is not analyzed further in this document.

3.5.2 Socioeconomics

According to BLM's Economic Profile System, the Per Capita Income in 2014 for La Paz County was \$21,722 and the Median Household Income was \$37,009 (almost \$13,000 less than the Arizona state average).

3.6 Water Resources

The project area is located within the Parker Basin aquifer. More specifically, it is located within the La Posa Plains Sub-basin which lies between the Dome Rock Mountains and the Plomosa Mountains and extends from the Parker Dam area south to the drainage divide between Tyson Wash and Indian Wash. Groundwater occurs both along the floodplain of the Colorado River and in an alluvial aquifer system under the La Posa Plains. The La Posa Plains Sub-basin has approximately 1,428,601.89 acre feet of water.

3.7 Visual Resources

The project is located on BLM lands classified as Visual Resource Management (VRM) Class III land. Class III Lands' objective is to partially retain the existing character of the landscape. The level of change to the characteristic landscape should be moderate. During the course of project implementation, management activities may be seen, but should not attract the attention of the observer (BLM 2011). Changes made by project activities must repeat the basic elements found in the natural features of the landscape in form, line, color, and texture.

The project area can only be viewed from very close to the project area. The entire area of the mine footprint is located in a small valley, bordered on east and west by ridgelines that run 60-80 feet above the height of the mine pit. The canyon has a distinct bend at the mouth, just below the project start, making the operation area out of view of most of the area. The mine area may be visible from the taller peaks of Middle Camp Mountain, but can only be accessed by foot and would only be in view if directly north of the proposed mine pit.

3.8 Cultural Resources

3.8.1 Archaeological Resources

The project area is located within the Lower Colorado River corridor. This corridor saw human activity from the Archaic Period (8000 B.C – 1050 B.C.) through the present. During the Formative Period (1050 B.C. - 500 A.D.), the Patayan culture (Yuman) occurred along this corridor. This culture was typified by polished red ware and vessels with the Colorado shoulder. While it is unclear what ultimately became of the Patayan culture, it may be related to modern Yuman-speaking groups. Patayan ceramics are found throughout the Protohistoric period and continue into the Historic period.

For this project, a Class I records search was conducted on August 31, 2015. At that time, Arizona State Museum (AZSITE) records identified no previous project within the project boundaries. There were also no previously-recorded archaeological sites within the project area. Seventeen previous projects have been conducted near the project area for which archaeological clearance was required and ten archaeological sites have been recorded within one mile of the current project area. Of the ten sites recorded within one mile of the project area, five sites are of prehistoric origin, three are historic sites, and two sites are of unknown culture/origin. None of these sites were located within the Area of Potential Effect (APE) for this project.

An archaeological survey of the project site was conducted to verify presence or absence of archaeologically important resources. Pedestrian transects were used to provide complete coverage of the project area including a 30-meter buffer surrounding the access road and all impact areas within WPE#1 and WPE#2. The survey identified a single historic site, a roadbed subsequently recorded as AZ R:7:148 (ASM). The site was not recommended as eligible for inclusion on the National Register of Historic Places.

3.8.2 Native American Concerns

The BLM consulted on this project with 14 Native American Tribes. The Chemehuevi Tribe indicated that they consider the project area to be a traditional range for hunting and gathering.

4.0 ENVIRONMENTAL CONSEQUENCES

4.1 Soils and Mineral Resource Impacts

The direct impacts to soils and mineral resources would be the same for Alternatives A, B and C as the footprint is the same for all three. All three Alternatives would have a direct impact in the mine and processing plant area of total removal and stockpiling of 18 inches of topsoil for use in concurrent mine reclamation.

The indirect impacts for Alternatives A, B, and C would be the temporary potential for increased localized erosion and sedimentation at the site of the topsoil and tailings stockpiles due to soil removal in those areas. Mitigation measures such as a rip-rap berm around all stockpiled material would minimize erosion at these sites.

Erosion and sedimentation rates would decline within 5 years after application of topsoil back onto the re-contoured reclaimed area as revegetation establishes protective cover and a lag gravel is developed on the surface of the reclaimed area.

Minerals extracted during this project would be permanently removed from the substrates. Since there would be no chemical treatment of the ore, all remaining minerals less than 3.0 specific gravity (SG) would be returned unaltered. Gold would be the main mineral retained during the extraction process. Trace amounts of other minerals with an SG over 3.0 could also be recovered and removed. Removing minerals other than gold (such as mercury and/or lead) would prevent them from leaching into the aquifer.

The cumulative impacts of Alternatives A, B, and C would be temporary loss of soil cover in the 16.2 acres. This amount of acreage would be less every year due to the concurrent reclamation process proposed in all three Alternatives. Under the No Action Alternative, no cumulative impacts would be expected.

4.2 Land Use Impacts (Recreational)

4.2.1 Direct Impacts

The direct impacts of Alternative A are the least of the three proposed Alternatives, as most of the winter visitors would not be present during the construction of the processing plant and retaining ponds due the time of year construction would occur. If construction is delayed WPE would take every opportunity to protect their safe off road travel, including using pilot vehicles in front and behind any equipment being transported to the project location. Employees coming to work and leaving work would increase road traffic. The direct impact to area recreation would be road use accessing the project. The project is located in a canyon with no outlet, so it would only restrict travel on LP 315 for two miles. No road closures would accompany the implementation of the project. All other common road use would be shared, safety pull-outs would be installed every 300 feet, or where a pull-out can be installed without undue altering of the existing roads.

The direct impacts of Alternative B would include additional traffic on the existing access roads during peak winter visitor season. Safety pull-outs would be constructed along the route of existing roads to assist in safe passage of every vehicle using those existing roads.

The direct impact of Alternative C would again include shared road use and in addition to that depending on which well is chosen to supply water to this project. Additional impact could range from ½ a mile of pipe to over 1 ½ miles of pipe. Construction is planned for the summer months when there is little to no off road traffic other than this projects traffic.

The direct impact of Alternative D would be negligible, as recreational traffic would occur as normal.

4.2.2 Indirect Impacts

The indirect impacts associated with Alternatives A, B, and C would be the temporary loss of ATV riding access and hiking on less than two miles of LP 315, 16.2 acres of temporary loss of vegetation for wildlife / bird watchers, and hunters. Mining activities would be contained within fenced and posted areas for safety, security, and protection of reclaimed land.

4.2.3 Cumulative Impacts

The cumulative impacts associated with Alternatives A, B, and C would again include the temporary loss of access to the 16.2 acres mine site and tailings impoundment area. Through WPE's concurrent reclamation this area may be restored and re-opened to the public in as little as 15-20 years.

4.3 Land Use Impacts (Public Rights-of-Way)

4.3.1 Direct, Indirect, and Cumulative Impacts

The impacts of Alternative A to the telecommunication line would include added mine traffic driving across the buried line and some temporary large construction vehicles driving across the line during the initial setup of the mining operation (i.e. haul vehicles carrying the proposed trailer and steel building, drilling equipment to drill the wells).

The impacts of Alternative B would be the same as Alternative A except that large water trucks would be required to travel across the line daily in order to meet the water needs of the mining operation.

The impacts of Alternative C would be the same as Alternative A.

There would be no impacts to the telecommunications line by Alternative D.

4.4 Biological Resources Impacts

4.4.1 Vegetation

Alternatives A, B, and C would have the same direct, indirect and cumulative impacts as the footprint would be the same. The direct impact to vegetation at the mine site would include mechanical removal and change of mycorrhizal communities in the soil. All vegetation clearing would be conducted using standard techniques with live retention of as many mature plants as feasible.

WPE would mitigate the indirect and cumulative impacts at the project site by using seeds harvested and propagated from plants that are being removed from the same area prior to

mining. The genetic and community composition of these species would be maintained after mining and reclamation re-contouring is completed and revegetation is underway. By using mature vegetation grown by WPE through an intern/scholarship program with the local Future Farmers of America (FFA) in the reclamation process the indirect impact would be minimal and temporary. Once reclaimed areas are completed the goal is to restore vegetative communities to the same as undisturbed within a period of mine life plus 10 years.

With the presence of water and the movement of vehicles on the access road, there is a higher probability of the introduction of invasive species into the project area. The MPO addresses methods of immediate removal to maintain a weed-free project area.

The cumulative impact of Alternatives A, B, and C would be temporary loss of vegetative cover on 16.2 acres. This amount of acreage will be less every year due to our concurrent reclamation process proposed in all three Alternatives. No impacts are anticipated under Alternative D.

4.4.2 Wildlife

The direct impact to wildlife from this project would be some wildlife would experience temporary displacement of habitat. Every effort would be made to protect burrowing animals during the construction phase of this operation by having wildlife monitors present through-out the construction process. Mammalian and avian species may avoid the mine areas and move to similar territories away from the construction activities. This project would not block migratory routes of ungulates and may not pose threats to local wildlife distributions.

The indirect impacts on wildlife in the project would be temporary loss of habitat. Again through the concurrent reclamation proposed in Alternatives A, B, and C, this habitat would be restored through-out the operation. If chemicals are needed to treat the water, wildlife safety fences would be constructed around the water retaining ponds to protect animals drawn to the water from potential drowning hazards. If no chemicals are needed, wildlife ladders would be installed in these ponds to provide an additional water source. Bird and bat populations that may be able to access the ponds by flight may be positively affected by the presence of the water on site.

The cumulative impact to wildlife in Alternatives A, B, and C would be temporary loss of habitat on 16.2 acres. This amount of acreage would be less every year due to our concurrent reclamation process proposed in all three Alternatives.

4.4.3 Threatened, Endangered, and Sensitive (TES) Species

An analysis of the project showed that eight TES species may occur on or near the project area (BIOME 2015). Only one species, listed as a Candidate under the ESA, the Sonoran desert tortoise (*Gopherus morafkai*), was identified as potentially occurring near the project area. Formal surveys were conducted to determine potential impacts to this species and are detailed below. The other seven species include American peregrine falcon, golden eagle, Le Conte's thrasher, western burrowing owl, bald eagle, California leaf-nosed bat, and cave myotis and have been addressed separately below.

4.4.3.1 Sonoran Desert Tortoise

The Sonoran desert tortoise is a Candidate for listing under the ESA and is monitored by the BLM for all proposed projects as a Sensitive species. Sonoran tortoises are found throughout the lower elevation bajadas and uplands of Arizona and northwestern Mexico (AGFD 2014) where they construct burrows under rocks, shrubs, or in caliche caves in drainages banks or

hillslopes. Sonoran tortoises, like the closely related Mojave tortoise are susceptible to a variety of mortality factors including predation by mammals and ravens, respiratory disease (URDS), habitat destruction, and interactions with humans.

The greatest human-induced threats to Sonoran desert tortoise are urban development, associated road building and highway upgrading, and the increasing demands of a larger population on outdoor recreation (BLM 2014). In 2011 the U.S. Fish and Wildlife Service (USFWS) found that listing the Sonoran population of the desert tortoise was warranted, but that listing was precluded by higher priority actions (76 FR 66370). As a result, the Sonoran population of the desert tortoise was added to the candidate species list, where its status will be reconsidered annually. The implementation of the preferred Alternative may affect, but is not likely to adversely affect the Sonoran desert tortoise.

A survey for Sonoran desert tortoise was conducted on 2-3 April 2015 (BIOME 2015). A total of 100 acres was surveyed using 10 m belt transects, walked in a roughly north-south direction on the project area. This included a 30 m buffer around the access road and the impacts areas within both mine claims. Although there were numerous potentially suitable habitat features (den structures, caliche caves, etc.), some of which may have been used by tortoise in the past, no evidence of recent tortoise use was observed on the survey area. All den or potential den structures were examined using reflected light. No tortoises were observed.

Mitigation Measures:

A detailed description of mitigation measures are described in (BIOME 2015). To minimize or eliminate impacts to tortoises on or near the project area, the following mitigation measures would be implemented:

1. The proposed mine footprint has been oriented to occupy a substantial amount of previously disturbed habitat. Disturbance of native habitat will be kept to a minimum.
2. Installation of tortoise exclusion fencing will keep tortoises out of the project area and continued monitoring and maintaining a clean project area will avoid increasing impacts by predators commonly attracted to such disturbances.
3. Concurrent reclamation will be used to minimize the amount of disturbed habitat is present on the mine area at any given time.
4. Monitoring reports will be sent annually to the AGFD to document the effectiveness of the mitigation measures.
5. Compensation for habitat alterations will be paid, per BLM regulations that will be used for tortoise conservation, management, and recovery in Arizona.

4.5 Water Resource

4.5.1 Direct Impacts

Alternative A would involve the drilling of up to two wells into the Parker basin aquifer's La Posa sub-basin. The La Posa sub-basin currently holds approximately 1,428,601.89 water acre feet; this operation would utilize .001% of this watershed. Broken down further, the Middle Tyson Wash sub-basin of the La Posa sub-basin has approximately 99,035 acre feet, so a 16.2 acre disturbance would make the impact of approximately .016%. These wells would be 600-750 feet deep, with 8 inch steel casing. The proposed action would require a production of 25-35

gallons per minute (gpm) per well, but until the first well is drilled, it is unknown if this can be met.

After the initial filling of the water ponds, a combined total of approximately 25,000 gallons per day of operation to replenish the ponds would be pumped. Water loss could occur on this project through absorption, evaporation and spillage, however mitigation measures would address this water loss in the following ways. Absorption would be addressed by extracting the ore to be processed the day it will be processed. This will help by processing ore with a moisture content of 8-20% moisture already present in the material. This would reduce the amount of water required to bring the ore to its saturation point.

Evaporation would be addressed with sun screening mesh installed over the ponds to reduce direct sunlight on the ponds. Sun screening would reduce evaporation, but due to the extreme desert temperatures, evaporation would still account for much of the water loss. Finally, spillage would be addressed with concrete swales along the sluice boxes to catch and return splashed water.

Alternative B would involve hauling water by truck from Quartzsite. The same amount of water will be extracted from the same aquifer basins and sub-basins so the aquifer's direct impact would be almost identical. This Alternative would create a fourth potential area of loss with spillage from truck while being transported and during transfer to truck and to ponds. This water loss would be minimal, but would be more than Alternative A. Other direct impacts on the water resources caused by hauling the water would include additional road impacts, emission release, dust, and potential of wildlife fatalities by increased traffic on entrance roads.

Alternative C would involve piping water to site from existing wells located within 2 miles of the retention ponds. One of these wells is located within the Middle Tyson Wash sub-basin of the La Posa sub-basin of the Parker Basin, being well # 55-808638. The other two wells #'s 55-526627 and 55-518344 draw from the Ehrenberg / Colorado River sub-basin of the La Posa sub-basin of the Parker Basin. The direct impact to this sub-basin will be less than .010%.

Alternative D No impacts to water resources would occur.

4.5.2 Indirect Impacts

Alternative A - The indirect impacts to the water resources of this Alternative is discharge of groundwater during the well drilling process. Additional water will be discharged during pump tests of the bore holes. Each well could take 3-5 days to drill to reach the depth requested and thus would only be a temporary disturbance to the local aquifer. Use of these wells during the mine life will withdraw 322.25 acre feet of water per year from the La Posa sub-basin.

Alternative B - The indirect impacts to the water resources of this Alternative would not require drilling new wells but would still withdraw 322.25 acre feet over the mine life.

Alternative C - The indirect impacts to the water resources of this Alternative include the withdrawal from the La Posa sub-basin and the Ehrenberg/Colorado River sub-basin. If the wells need to be re-drilled or re-worked, water will be discharged during drill and pump tests into sumps.

4.5.3 Cumulative Impacts

Alternative A - The cumulative impacts to the water resources of this Alternative would consist of increased ground water withdrawals from the La Posa sub-basin. An estimated total ground water withdrawal over the life of the mine (10 years) at 35,000 gallons per day and 300 days of

operation per year for a total estimated water withdrawal of 322.25 acre feet over the 10 year mine life.

Alternative B - The cumulative impacts to the water resources of this Alternative would be the same as Alternative A. Ground water withdrawals from off-site wells drawing from the same aquifer basin and sub-basin would, be the same acre feet impact.

Alternative C - The cumulative effects to the water resources of this Alternative would divide ground water withdrawals between two aquifer basins. The three wells identified within the Alternative description would temporarily impact the aquifer for up to 10 years. During this time, impacts to water resources would be minimal in comparison to the adjacent town of Quartzsite, AZ.

4.6 Climate Change

4.6.1 Direct Impacts

Alternative A - This Alternative would have a direct impact on climate change through emissions released from the mining heavy equipment, generators and motorized support equipment. Increases in temperature from climate change would lead to increased evaporation and total water loss over the life of the project.

Alternative B - This Alternative would have a direct impact on climate change through the same emissions release as Alternative A with the additional emission release from the water haul trucks and the dust control water trucks. The aquifer impact would remain the same as Alternative A as the water requirements remain the same.

Alternative C - This Alternative would have a direct impact on climate change through the same emission release as Alternatives A and B with the additional emissions generated during the construction and maintenance of the pipe carrying the water from the existing wells to the project area. The aquifer impact would remain the same as Alternatives A and B as the water requirements remain the same.

Alternative D – There are no impacts to climate change under this alternative.

4.6.2 Indirect Impacts

Alternative A - This Alternative would have an indirect impact on climate change through temporary loss of vegetation and wildlife habitat in the 16.2 acre project area footprint with 4.67 of those acres being access roads. The 4.67 road acres would be less impacted than the 11.53 project area, primarily employee and vendor traffic.

Alternative B - This Alternative would have an indirect impact on climate change through temporary loss of vegetation and wildlife habitat in the 16.2 acre project area footprint with 4.67 of those acres being access roads. This Alternative would have the additional impact of the 4.67 acres of roads being maintained to handle the added travel of heavy water truck traffic.

Alternative C - This Alternative would have an indirect impact on climate change through temporary loss of vegetation and wildlife habitat in the 16.2 acre project area footprint with 4.67 of those acres being access roads. This Alternative would have the additional impact of maintaining a road along the path of the pipe for maintenance and the pipe removal at the end of the operation.

Alternative D – There are no impacts under this alternative.

4.6.3 Cumulative Impacts

Alternative A - This Alternative would have a cumulative impact on climate change through an estimated ten years of the additional emissions and loss of 322.25 acre feet of water from the La Posa sub-basin. The temporary loss of vegetation will be mitigated through the concurrent reclamation and use of mature vegetation.

Alternative B - This Alternative would have a cumulative impact on climate change through an estimated ten years of additional emissions and loss of 322.25 acre feet of water from the La Posa sub-basin. Additional impact of hauling water from Quartzsite would include increased emissions, worn out tires going to landfills, waste oil from regular maintenance of the over the road water haul trucks, and extra wear and tear of the roads leading to the project area.

Alternative C - This Alternative would have a cumulative impact on climate change through an estimated ten years of additional emissions and loss of 322.25 acre feet of water from the La Posa sub-basin. Additional impact of the construction of the piping from existing wells, pumps and lift stations needed to push the water 2 miles.

Alternative D – There are no impacts under this alternative.

4.7 Socio-Economics

4.7.1 Direct, Indirect, and Cumulative Impacts

Alternatives A, B, and C would have nearly the same direct, indirect, and cumulative impacts on Socio-Economics. The project would employ an estimated 32 employees on a full time basis once it is in production. During the construction phase of the processing plant an additional 12 employees would be employed on a part time basis, mostly coming from the local labor force where required skilled labor can be found. Using employment multiplier impacts an additional 50 indirect jobs in La Paz County could be created through outside support companies hires. Any possible environmental justice and/or socio-economic impacts on local or regional disadvantaged economic, racial, or ethnic populations would be beneficial as a result of increased employment opportunities afforded by the project. Under Alternative B, additional water truck drivers would likely be employed.

No other direct, indirect, or cumulative negative impacts associated with socio-economic are expected to occur.

Alternative D - No Action. Under this Alternative, the economic benefits listed above would not occur.

4.8 Visual Resource Management (VRM)

This projects area of operation is in an area classified as a VRM class III management area. The objective of this class is to partially retain the character of the landscape. The level of change to the characteristic landscape should be moderate. Management activities may attract attention but should not dominate the view of the casual observer. Based on this classification, visual impacts would be minimal for this project.

4.8.1 Direct Impacts

Alternative A - There would be minimal direct VRM impact due to this project being located in an area not visible from any paved roadway. Given the area of the project, the aspect and elevation of the mine pits, and the location of critical view-points (communities, travel crossings, etc.) there would be minimal at most impact to the visual resources.

Alternative B - Having the same footprint as Alternative A, this Alternatives direct impact to VRM would be minimal.

Alternative C - Again having the same footprint as Alternatives A and B, this Alternatives direct impact to VRM would be minimal. This Alternative does however add the construction of a 6 inch PVC pipe that will be used to carry water to the retention ponds location from existing wells in the area. Depending upon which well is chosen to supply the project with water would determine the level of impact to the VRM.

4.8.2 Indirect Impacts

Alternative A – There are no indirect impacts to VRM.

Alternative B - There are no indirect impacts to VRM.

Alternative C - There are no indirect impacts to VRM.

4.8.3 Cumulative Impacts

Alternatives A, B, and C would have an extremely minimal effect on the VRM in this projects area. Any impacts would be temporary and well within the guidelines contained in the Class III classification.

4.9 Cultural Resource Impacts

4.9.1 Direct, Indirect, and Cumulative Impacts

There would be no direct, indirect, or cumulative impacts on cultural resources by this project as only a single cultural resource was identified in the project area.

5.0 TRIBES, INDIVIDUALS, ORGANIZATIONS, OR AGENCIES CONSULTED

Local stakeholders within 1 mile of the project area

TDS Telecom

Arizona Game and Fish Department

Colorado River Indian Tribes

Comment [TKJ1]: Add tribal folks